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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MCCLOUD, RENATA D	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,460	KOVACH ET AL.	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 12,14,15,19,20 rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al (US 5749547) in view of Koogler (US 4352010) and further in view of Nojima et al (US 6864879)

Claim 12: Young et al teach a control knob rotated by a user (fig. 2:36); an encoder (38) determining a speed of the knob over a period (col. 6:38-62); a processor (54) correlating the magnitude of power provided to the vehicle with a signal from the knob (col.6: 38-49). They do not teach the signal being the speed of the rotation of the knob or a period of about 50 ms or less, a light source, or a rotatable disk in communication with the knob and intervening between the light source and the optical detector. Koogler teaches a transmitter having a rotating control wheel (15); determining a rate of rotation of the wheel over a range of 50 ms or less (col. 3:38-40; fig. 2: shows determining the rate from 0 to s1, 0 being less than 50ms); correlating the power transmitted (col. 4:58-63) with the rate of rotation of the wheel by multiplying a distance of rotation by a time factor (col. 1:31-37 teaches frequency (speed)/revolution... for example, 10hz/rev. = 10/t/rev. = 10rev./t, so the rotation (revolution) is multiplied by a time factor 10/t), and a processor (fig. 3A). Nojima et al teach a rotatable control knob (fig. 2a: 3), a light source (fig. 6b: 41), an optical detector (fig. 6B: 42) in communication with the knob (Fig. 2a: 3) to

detect the rotation of the knob (col. 6:61-7:15, a rotatable disk (fig. 2A, 6B: 10/12) in communication with the knob (Fig. 2A: 3) and intervening between the light source (fig. 6B: 41) and the optical detector (fig. 6B: 42), and a processor in communication with the optical detector (col. 7:9-10). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Young et al to use the transmitters of Koogler and Nojima et al in order to control the speed and power.

Claim 14: Koogler teaches a processor (fig. 3A) configured to generate the factor proportional to the speed of knob rotation (col. 1:31-37 teaches frequency (speed)/revolution; col. 4:20-32).

Claim 15: Young et al teach generating pulses with an encoder (col. 6:54-63). Koogler teaches generating pulses with an encoder receiving light transmitted through gaps (fig. 1:20; col. 1:25-30) in communication with the knob (col. 3:10-62). Nojima et al teach generating pulses with an encoder receiving light transmitted through gaps wherein the processor is configured to detect knob rotation based on a rate of changes transmission of light (fig. 6B: 12; col. 5:44-54, 6:61-7:15, Also, it is well known in the art that encoders comprise such components and function in that manner).

Claim 19: Young et al teach an antenna for communication between a power source and a processor (Fig. 12:142).

Claim 20: Young et al teach a wired communications link between the power source and the processor (fig. 13:150)

3. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al (US 5749547) in view of Koogler (US 4352010) and further in view of Nojima et al (US 6864879) and Nelson et al (US 6465772).

Claim 16: Young et al, Koogler, Nojima et al teach the limitations of claim 15. Referring to claim 16, they do not teach a second optical detector positioned at a different location along a disk, the processor configured to detect a direction of knob rotation based on a phase difference between electrical signals from the first and second detectors. Nelson et al teach a first optical detector (120) and second optical detector (122) positioned at a different location along a disk (188), and a processor (fig. 11) configured to detect a direction of knob rotation based on a phase difference between electrical signals from the first and second detectors (col. 5:18-38, 5:60-6:8, 6:66-7:13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Young et al, Koogler and Nojima et al to use the sensors as taught by Nelson et al in order to reduce errors in the sensing.

Claim 17: Young et al, Koogler, Nojima et al teach the limitations of claim 12. Referring to claim 17, they do not teach the disk includes reflecting elements spaced at intervals to allow optical communication between the light source and the detector, wherein the processor is configured to detect knob rotation based on a rate of changed reflection of light. Nelson et al teach a disk includes reflecting elements spaced at intervals to allow optical communication between the light source and the detector, wherein the processor is configured to detect knob rotation based on a rate of changed reflection of light (col. 5:25-32, 5:60-6:8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Young et al, Koogler and Nojima et al to use reflectors as taught by Nelson et al in order to reduce the number of components.

Claim 18: Young et al, Koogler, Nojima et al, and Nelson et al teach the limitations of claim 17. Referring to claim 18, Nelson et al teach a first optical detector (120) and second optical detector (122) positioned at a different location along a disk (188), and a processor (fig.

11) configured to detect a direction of knob rotation based on a phase difference between electrical signals from the first and second detectors (col. 5:18-38, 5:60-6:8, 6:66-7:13).

4. Claims 12,14,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Procab manual.

Claim 12: a control knob rotated by a user; an encoder determining a speed of the wheel over a period; a processor correlating the magnitude of power provided to the vehicle with the speed of the rotation of the wheel (pg 3 speed control section) by multiplying a distance of rotation of the wheel by a factor determined from a time of wheel rotation (pg 3 speed control section; pg7-8 expansion section; pg 12 steps 6-7; it is known that speed is a distance over time, so the factor would be 1/t). They do not teach a period of about 50 ms or less, a light source, or a rotatable disk in communication with the knob and intervening between the light source and the optical detector. Koogler teaches a transmitter having a rotating control wheel (15); determining a rate of rotation of the wheel over a range of 50 ms or less (col. 3:38-40; fig. 2: shows determining the rate from 0 to s1, 0 being less than 50ms); correlating the power transmitted (col. 4:58-63) with the rate of rotation of the wheel by multiplying a distance of rotation by a time factor (col. 1:31-37 teaches frequency (speed)/revolution... for example, 10hz/rev. = 10/t/rev. = 10rev./t, so the rotation (revolution) is multiplied by a time factor 10/t), and a processor (fig. 3A). Nojima et al teach a rotatable control knob (fig. 2a: 3), a light source (fig. 6b: 41), an optical detector (fig. 6B: 42) in communication with the knob (Fig. 2a: 3) to detect the rotation of the knob (col. 6:61-7:15, a rotatable disk (fig. 2A, 6B: 10/12) in communication with the knob (Fig. 2A: 3) and intervening between the light source (fig. 6B: 41) and the optical detector (fig. 6B: 42), and a processor in communication with the optical detector (col. 7:9-10). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify the invention of the Procab Manual to use the transmitters of Koogler and Nojima et al in order to control the speed and power. Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made use a period of about 50ms or less, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves on routine skill in the art (see MPEP 2144.05 (II) (A)).

Claim 14: Procab Manual teaches the factor is proportional to the speed of knob rotation (pg 3 speed control section; pg7-8 expansion section; pg 12 steps 6-7; it is known that speed is a distance over time, so the factor would be 1/t).

Claim 15: Young et al teach generating pulses with an encoder (col. 6:54-63). Koogler teaches generating pulses with an encoder receiving light transmitted through gaps (fig. 1:20; col. 1:25-30) in communication with the knob (col. 3:10-62). Nojima et al teach generating pulses with an encoder receiving light transmitted through gaps wherein the processor is configured to detect knob rotation based on a rate of changes transmission of light (fig. 6B: 12; col. 5:44-54, 6:61-7:15, Also, it is well known in the art that encoders comprise such components and function in that manner).

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Procab Manual, Koogler and Nojima et al (US 6864879) and further in view of Nelson et al (US 6465772).

Claim 16: Procab Manual, Koogler, and Nojima et al teach the limitations of claim 15. Referring to claim 16, they do not teach a second optical detector positioned at a different location along a disk, the processor configured to detect a direction of knob rotation based on a

phase difference between electrical signals from the first and second detectors. Nelson et al teach a first optical detector (120) and second optical detector (122) positioned at a different location along a disk (188), and a processor (fig. 11) configured to detect a direction of knob rotation based on a phase difference between electrical signals from the first and second detectors (col. 5:18-38, 5:60-6:8, 6:66-7:13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Procab Manual, Koogler and Nojima et al to use the sensors as taught by Nelson et al in order to reduce errors in the sensing.

Claim 17: Procab Manual, Koogler, Nojima et al teach the limitations of claim 12. Referring to claim 17, they do not teach the disk includes reflecting elements spaced at intervals to allow optical communication between the light source and the detector, wherein the processor is configured to detect knob rotation based on a rate of changed reflection of light. Nelson et al teach a disk includes reflecting elements spaced at intervals to allow optical communication between the light source and the detector, wherein the processor is configured to detect knob rotation based on a rate of changed reflection of light (col. 5:25-32, 5:60-6:8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Procab Manual, Koogler and Nojima et al to use reflectors as taught by Nelson et al in order to reduce the number of components.

Claim 18: Procab Manual, Koogler, Nojima et al, and Nelson et al teach the limitations of claim 17. Referring to claim 18, Nelson et al teach a first optical detector (120) and second optical detector (122) positioned at a different location along a disk (188), and a processor (fig. 11) configured to detect a direction of knob rotation based on a phase difference between electrical signals from the first and second detectors (col. 5:18-38, 5:60-6:8, 6:66-7:13).

Response to Arguments

6. Applicant's arguments with respect to claims 12,14-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud
Examiner
Art Unit 2837

rdm

LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER